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E1	8	BOVIN N I/AU
E2	172	BOVIN N V/AU
E3	34 -->	BOVIN NICOLAI/AU
E4	1	BOVIN NICOLAI N/AU
E5	71	BOVIN NICOLAI V/AU
E6	2	BOVIN NICOLAI VLADIMIROVICH/AU
E7	4	BOVIN NIKOLAI/AU
E8	6	BOVIN NIKOLAI V/AU
E9	1	BOVIN NIKOLAI VLADIMIROVICH/AU
E10	3	BOVIN NIKOLAJ V/AU
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E12	1	BOVIN NIKOLAY V/AU

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E13	2	BOVIN NIKOLAY VLADIMIROVICH/AU
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E16	1	BOVIN U P/AU
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E20	47	BOVINA A F/AU
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E24          34     BOVINA CARLA/AU

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             1 "BOVIN NIKOLAY"/AU
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               IN NIKOLAY"/AU OR "BOVIN NIKOLAY V"/AU OR "BOVIN NIKOLAY VLADIMI
               ROVICH"/AU)

=> e gilliver lissa/au
E1            4     GILLIVER K/AU
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E8            1     GILLIVER P J/AU
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E12           2     GILLIVRAY W A/AU

=> s e2-e3
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             1 "GILLIVER LISSA"/AU
L2           2 ("GILLIVER L G"/AU OR "GILLIVER LISSA"/AU)

=> e henry stephen/au
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E12           2     HENRY STEVEN/AU

=> s e3-e10
            17 "HENRY STEPHEN"/AU
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L3          36 ("HENRY STEPHEN"/AU OR "HENRY STEPHEN F"/AU OR "HENRY STEPHEN
               G"/AU OR "HENRY STEPHEN M"/AU OR "HENRY STEPHEN MICHAEL"/AU OR
               "HENRY STEPHEN MICHEAL"/AU OR "HENRY STEPHEN P"/AU OR "HENRY
               STEPHEN PHILIP"/AU)

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=> s e1-e6
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             2 "KORCHAGINA ELENA YURIEVNA"/AU
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               A"/AU OR "KORCHAGINA ELENA Y"/AU OR "KORCHAGINA ELENA YU"/AU OR
               "KORCHAGINA ELENA YURIEVNA"/AU)

=> l1 or l2 or l3 or l4
L5         343 L1 OR L2 OR L3 OR L4

=> s l5 and antigen
        335182 ANTIGEN
        263586 ANTIGENS
        422387 ANTIGEN
                 (ANTIGEN OR ANTIGENS)
L6          71 L5 AND ANTIGEN

=> l6 and (carbohydrate or polysaccharide)
        136989 CARBOHYDRATE
        157926 CARBOHYDRATES
        229667 CARBOHYDRATE
                 (CARBOHYDRATE OR CARBOHYDRATES)
         65584 POLYSACCHARIDE
         81844 POLYSACCHARIDES
        103380 POLYSACCHARIDE
                 (POLYSACCHARIDE OR POLYSACCHARIDES)
L7          28 L6 AND (CARBOHYDRATE OR POLYSACCHARIDE)

=> d l7 1-28 ibib abs
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L7 ANSWER 1 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:666942 CAPLUS
DOCUMENT NUMBER: 147:425114
TITLE: Synthetic glycolipid modification of red blood cell membranes
AUTHOR(S): Frame, Tom; Carroll, Tim; Korchagina, Elena; Bovin, Nicolai; Henry, Stephen
CORPORATE SOURCE: Immucor Inc., Atlanta, GA, USA
SOURCE: Transfusion (Malden, MA, United States) (2007), 47(5), 876-882
CODEN: TRANAT; ISSN: 0041-1132
PUBLISHER: Blackwell Publishing, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Glycolipids have a natural ability to insert into red cell (RBC) membranes. Based on this concept the serol. of RBCs modified with synthetic analogs of blood group glycolipids (KODE technol.) was developed, which entails making synthetic glycolipid constructs engineered to have specific performance criteria. Such synthetic constructs can be made to express a potentially unlimited range of carbohydrate blood group determinants. Synthetic constructs incorporating A, B, acquired-B, and Lea blood group determinants were constructed and used to modify RBCs. Modified cells were assessed by routine serol. methods using a range of com. available monoclonal antibodies. RBCs modified with different concns. of synthetic glycolipids were able to give controllable serol. results. Synthetic A and B modified cells were able to be created to represent the serol. of "weak" subgroups. Specialized cells such as those bearing synthetic acquired-B antigen reacted as expected, but also exhibited extended features due to the cells bearing only specific antigen. Synthetic Lea-modified cells reacted as expected with anti-Lea reagents, but unexpectedly, were also able to detect the chemical anti-Leab specificity of serol. monoclonal anti-Leb reagents. RBCs can be created to express normal and novel carbohydrate profiles by inserting synthetic glycolipids into them. Such cells will be useful in creating specialized antigen panels and for quality control purposes.
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:154309 CAPLUS
DOCUMENT NUMBER: 146:336371
TITLE: Clustered carbohydrates as a target for natural killer cells: A model system
AUTHOR(S): Kovalenko, Elena I.; Abakushina, Elena; Telford, William; Kapoor, Veena; Korchagina, Elena; Khaidukov, Sergei; Molotkovskaya, Irina; Sapozhnikov, Alexander; Vlaskin, Pavel; Bovin, Nicolai
CORPORATE SOURCE: Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, 117997, Russia
SOURCE: Histochemistry and Cell Biology (2007), 127(3), 313-326
CODEN: HCBIFP; ISSN: 0948-6143
PUBLISHER: Springer
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Membrane-associated oligosaccharides are known to take part in interactions between natural killer (NK) cells and their targets and modulate NK cell activity. A model system was therefore developed using synthetic

glycoconjugates as tools to modify the carbohydrate pattern on NK target cell surfaces. NK cells were then assessed for function in response to synthetic glycoconjugates, using both cytolysis-associated caspase 6 activation measured by flow cytometry and IFN-γ production Lipophilic neoglycoconjugates were synthesized to provide their easy incorporation into the target cell membranes and to make carbohydrate residues available for cell-cell interactions. While incorporation was successful based on fluorescence monitoring, glycoconjugate incorporation did not evoke artifactual changes in surface antigen expression, and had no neg. effect on cell viability. Glycoconjugates contained Lex, sulfated Lex, and Ley sharing the common structure motif trisaccharide Lex were revealed to enhance cytotoxicity mediated specifically by CD16+CD56+ NK cells. The glycoconjugate effects were dependent on saccharide presentation in a polymeric form. Only polymeric, or clustered, but not monomeric glycoconjugates resulted in alteration of cytotoxicity in the authors' system, suggesting that appropriate presentation is critical for carbohydrate recognition and subsequent biol. effects.

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:1042259 CAPLUS
DOCUMENT NUMBER: 143:339681
TITLE: Synthetic membrane anchors
INVENTOR(S): Bovin, Nicolai; Gilliver, Lissa; Henry, Stephen; Korchagina, Elena
PATENT ASSIGNEE(S): Kiwi Ingenuity Limited, N. Z.
SOURCE: PCT Int. Appl., 109 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005090368	A1	20050929	WO 2005-NZ52	20050322
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2005223715	A1	20050929	AU 2005-223715	20050322
CA 2560781	A1	20050929	CA 2005-2560781	20050322
EP 1735323	A1	20061227	EP 2005-722123	20050322
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				
CN 1938325	A	20070328	CN 2005-80009170	20050322
JP 2007530532	T	20071101	JP 2007-504907	20050322
IN 2006DN06089	A	20070831	IN 2006-DN6089	20061018
US 20070197466	A1	20070823	US 2007-593829	20070112
PRIORITY APPLN. INFO.:			NZ 2004-531866 A	20040322
			NZ 2005-537941 A	20050128

OTHER SOURCE(S): MARPAT 143:339681

AB The invention relates to synthetic mols. such as modified glycolipids that spontaneously and stably incorporate into lipid by-layers, including cell membranes. Particularly, although not exclusively, the invention relates to the use of these mols. as synthetic membrane anchors or synthetic mol. constructs to effect qual. and quant. changes in the expression of cell surface antigens. Being able to effect qual. and/or quant. changes in the surface antigens expressed by a cell has diagnostic and therapeutic value. In a first aspect the invention consists in a mol. of the structure R-S2-L for use as a synthetic membrane anchor or in the preparation of synthetic mol. constructs where: R is a chemical reactive functional group such as bis(N-hydroxysuccinimidyl), bis(4-nitrophenyl), bis(pentafluorophenyl), and bis(pentachlorophenyl); S2 is a spacer linking R to L such as -CO(CH2)3CO-, -CO(CH2)4CO-(adipate (Ad)), and -CO(CH2)5CO-; and L is a lipid selected from the group consisting of diacyl- and dialkylglycerolipids, including glycerophospholipids, and sphingosine derived diacyl- and dialkyllipids, including ceramide. In a second aspect, the invention consists in a synthetic mol. construct of the structure F-S1-S2-L where: F is an antigen selected from the group consisting of carbohydrates, proteins, lipids, lectins, avidins and biotin; S1-S2 is a spacer linking F to L; and L is a lipid selected from the group consisting of diacyl- and dialkylglycerolipids, including glycerophospholipids, and sphingosine derived diacyl- and dialkyllipids, including ceramide.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:455781 CAPLUS

DOCUMENT NUMBER: 141:223907

TITLE: The Modification of Cell Surface with Lipophilic Glycoconjugates and the Interaction of Modified Cells with Natural Killer Cells

AUTHOR(S): Kovalenko, E. I.; Khirova, E. V.; Molotkovskaya, I. M.; Ovchinnikova, T. V.; Sablina, M. A.; Sapozhnikov, A. M.; Khaidukov, S. V.; Bovin, N. V.

CORPORATE SOURCE: Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, 117997, Russia

SOURCE: Russian Journal of Bioorganic Chemistry (Translation of Bioorganicheskaya Khimiya) (2004), 30(3), 250-260 CODEN: RJBCET; ISSN: 1068-1620

PUBLISHER: MAIK Nauka/Interperiodica Publishing

DOCUMENT TYPE: Journal

LANGUAGE: English

AB An exptl. model system involving the modification of carbohydrate composition of the target cell surface with neoglycolipids was developed for studying the role of surface carbohydrates of target cells in the NK-cell-mediated cytotoxicity. The polymeric glycoconjugates of the Glyc-PAA-PEA and Glyc-PAA(Flu)-PEA types (where Glyc was an oligosaccharide residue, PAA poly(acrylamide) polymer, PEA the phosphatidylethanolamine residue, and Flu fluorescein residue) capable of incorporating into the cell membrane were synthesized. The optimum structures of neoglycoconjugates and the conditions for their incorporation into K562 and Raji cell lines, which differ in their sensitivity to the NK-cell-mediated lysis were selected. The mechanism of association of glycoconjugates with the plasma cell membrane and the kinetics

of their elimination from the cell surface were investigated using the fluorescent-labeled Glyc-PAA(Flu)-PEA derivs. The spatial accessibility of the carbohydrate ligands for the interaction with human NK cells was demonstrated. The target cells modified with the Lex trisaccharide were shown to be more sensitive to the cytotoxic effect of human NK cells than the intact cells.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 5 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:179410 CAPLUS
DOCUMENT NUMBER: 140:355485
TITLE: Specificity of human anti-carbohydrate IgG antibodies as probed with polyacrylamide-based glycoconjugates
AUTHOR(S): Smorodin, E. P.; Kurtenkov, O. A.; Sergeyev, B. L.; Pazynina, G. V.; Bovin, N. V.
CORPORATE SOURCE: Institute of Experimental & Clinical Medicine, Tallinn, 11619, Estonia
SOURCE: Glycoconjugate Journal (2004), 20(2), 83-89
CODEN: GLJOEW; ISSN: 0282-0080
PUBLISHER: Kluwer Academic Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The TF, Tn, and SiaTn glycotopes are frequently expressed in cancer-associated mucins. Antibodies to these glycotopes were found in human serum. A set of polyacrylamide (PAA)-based glycoconjugates was applied to the direct and competitive enzyme-linked immunosorbent assays (ELISA) to characterize the specificity of serum IgG antibodies. The anti-TF, -Tn and -SiaTn IgG were affinity purified from serum of cancer patients and characterized using PAA-conjugates and free saccharides. The anti-TF and -Tn antibodies were shown to be specific. The anti-TF IgG bound both Galβ1-3GalNAcα- and Galβ1-3GalNAcβ-PAA, the latter was three-four times more effective inhibitor of antibody binding. The anti-Tn IgG reacted only with GalNAcα-PAA. The anti-SiaTn IgG cross-reacted with Tn-PAA but SiaTn-PAA was five-six times more effective inhibitor in a competitive assay. The IC50 values for PAA-conjugates with the corresponding antibodies typically ranged from 2 to 5 + 10-8 M. The antibodies display a low specificity to mucin-type glycoconjugates in comparison with PAA-conjugates as was shown for mucins isolated from human malignant tumor tissues, ovine submaxillary mucin (OSM) and asialo-OSM. The unusual IgG-antibody specificity to GalNAcβ and GalNAcβ1-3GalNAcβ ligands was found in human serum.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 6 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:23220 CAPLUS
DOCUMENT NUMBER: 141:69871
TITLE: Glycochip: Multiarray for the study of carbohydrate-binding proteins
AUTHOR(S): Galanina, O. E.; Mecklenburg, M.; Nifantiev, N. E.; Pazynina, G. V.; Bovin, N. V.
CORPORATE SOURCE: Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, 117997, Russia
SOURCE: Lab on a Chip (2003), 3(4), 260-265
CODEN: LCAHAM; ISSN: 1473-0197
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal

LANGUAGE: English

AB Biotinylated glycoconjugates which were designed as oligosaccharides attached to 30 kDa polyacrylamide were coated on a microarray platform XNAonGOLD, which was developed earlier for an oligonucleotide assay. The specificity of antibodies to carbohydrate antigens was analyzed using the glyco-microarray. Comparison of the obtained results with those of common 96-well plate ELISA completely coincided with the found antibody specificities. However, parameters such as the anal. sensitivity of the method and the amount of biotinylated material coated on the microarray platform proved to be worse than expected.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 7 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:509839 CAPLUS

DOCUMENT NUMBER: 140:159829

TITLE: Arrays of peptides and carbohydrate molecules on self-assembled monolayers and their application in blood serology

AUTHOR(S): Cieplik, Michael; Galanina, Oxana; Joos, Thomas; Pfeiffer, Matthias; Klingel, Sven; Bovin, Nikolay; Nifant'ev, Nikolay; Mecklenburg, Michael; Videnov, Georgi; Ortigao, Flavio

CORPORATE SOURCE: Interactive Biotechnologie GmbH, Ulm, Germany

SOURCE: Peptides 2000, Proceedings of the European Peptide Symposium, 26th, Montpellier, France, Sept. 10-15, 2000 (2001), Meeting Date 2000, 967-968. Editor(s): Martinez, Jean; Fehrentz, Jean-Alain. Editions EDK: Paris, Fr.
CODEN: 69EDWK; ISBN: 2-84254-048-4

DOCUMENT TYPE: Conference

LANGUAGE: English

AB Enzyme function and ligand-binding on arrays of peptides and carbohydrates were identified using a robust and universal platform for miniaturized assays. A highly ordered and addressable layer of streptavidin (SA) mols. was constructed via a self-assembling monolayer of long-chain alkylthiol and a chemical interface with terminal biotin. The biochips are easy to handle, save reagent needs and time and have the necessary potential for parallel parameter processing. Samples of 50 μl of mouse sera were tested against a set of 20 immobilized carbohydrate antigens in less than one hour.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 8 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:447486 CAPLUS

DOCUMENT NUMBER: 139:228222

TITLE: Binding Sites for Lewis Antigens Are Expressed by Human Colon Cancer Cells and Negatively Affect Their Migration

AUTHOR(S): Hittelet, Axel; Camby, Isabelle; Nagy, Nathalie; Legendre, Hugues; Bronckart, Yves; Decaestecker, Christine; Kaltner, Herbert; Nifant'ev, Nikolay E.; Bovin, Nicolai V.; Pector, Jean-Claude; Salmon, Isabelle; Gabius, Hans-Joachim; Kiss, Robert; Yeaton, Paul

CORPORATE SOURCE: Department of Gastroenterology, Ersamus University Hospital, Brussels, 1070, Belg.

SOURCE: Laboratory Investigation (2003), 83(6), 777-787
CODEN: LAINAW; ISSN: 0023-6837

PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In colon cancer, endothelial cell selectins can promote tumor cell attachment via interactions with sialylated Lewis antigens present at the surface of tumor cells, thereby facilitating tumor cell arrest and transmigration into the extravascular space. However, it is not known whether Lewis antigens interact with colon tumor cells and modify their migration. Our aim was to detect the presence of binding sites on human tumor cells for Lewisa/x antigens and their sialylated derivs. in vitro and in vivo and to analyze their influence on migration of colon cancer cells. The immunocytochem. and histochem. levels of expression of the four Lewis antigens were quant. determined in four human colon cancer cell lines and in in vivo nude mice xenografts. The levels of expression of specific binding sites for these sugar epitopes were determined by synthetic neoglycoconjugates. The influence of binding of these carbohydrate ligands on cancer cell migration was quant. evaluated by computer-assisted phase-contrast videomicroscopy performed on Matrigel culture supports either left uncoated or coated with neoglycoconjugate presenting synthetic Lewisa, sialyl Lewisa, Lewisx, or sialyl Lewisx antigens. The influence of the calcium concentration in the culture medium on the Lewis antigen -mediated effects was checked. Human colon cancer cells expressed significant amts. of specific binding sites detected by the synthetic probes in addition to the oligosaccharide epitopes. The expression levels differed considerably between the four cell lines and between in vitro and in vivo specimens. Cell migration anal. revealed that the four Lewis antigens markedly decreased the levels of migration of the HCT-15 and LoVo cancer cells. This effect depends on the calcium concentration in the culture medium. Binding sites for Lewis epitopes are present on colon cancer cells. The functional relevance of these sites is indicated by the neg. influence on cell migration of a matrix containing the oligosaccharides as ligand parts.
REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 9 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:967343 CAPLUS
DOCUMENT NUMBER: 138:383010
TITLE: Analysis of Binding of Mannosides in Relation to Langerin (CD207) in Langerhans Cells of Normal and Transformed Epithelia
AUTHOR(S): Plzak, Jan; Holikova, Zuzana; Dvorankova, Barbora; Smetana, Karel, Jr.; Betka, Jan; Hercogova, Jana; Saeland, Sem; Bovin, Nicolai V.; Gabius, Hans-Joachim
CORPORATE SOURCE: Inst. Anatomy, Dep. Otorhinolaryngology, Charles University, Prague, Czech Rep.
SOURCE: Histochemical Journal (2002), 34(5), 247-253
CODEN: HISJAE; ISSN: 0018-2214
PUBLISHER: Kluwer Academic Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Tandem-repeat C-type lectins (pattern-recognition receptors) with specificity for mannosides are intimately involved in antigen recognition, uptake, routing and presentation in macrophages and dendritic cells. In Langerhans cells, Langerin (CD207), a type-II transmembrane protein with a single C-type carbohydrate recognition domain attached to a heptad repeat in the neck region, which is likely to establish oligomers with an α-coiled-coil stalk, has been implicated

in endocytosis and the formation of Birbeck granules. The structure of Langerin harbors essential motifs for Ca2+-binding and sugar accommodation. Lectin activity has previously been inferred by diminished antibody binding to cells in the presence of the glycan ligand mannan. In view of the complexity of the C-type lectin/lectin-like network, it is unclear what role Langerin plays for Langerhans cells in binding mannosides. In order to reveal in frozen tissue sections to what extent mannose-binding activity co-localizes with Langerin, we have used a synthetic marker, i.e. a neoglycoprotein carrying mannose maxiclusters, as a histochem. ligand, and computer-assisted fluorescence monitoring in a double-labeling procedure. Mannoside-binding capacity was detected in normal epithelial cells. Double labeling ensured the unambiguous assessment of the binding of the neoglycoprotein in Langerhans cells. Light-microscopically, its localization profile resembled the pattern of immunohistochem. detection of Langerin. This result has implications for suggesting rigorous controls in histochem. anal. of this cell type, because binding of kit reagents, i.e. mannose-rich glycoproteins horseradish peroxidase or avidin, to Langerin (or a spatially closely associated lectin) could yield false-pos. signals. To show that recognition of carbohydrate ligands in dendritic cells is not restricted to mannose clusters, we have also documented binding of carrier-immobilized histo-blood group A trisaccharide, a ligand of galectin-3, which was not affected by the presence of a blocking antibody to Langerin. Remarkably, access to the carbohydrate recognition domain of Langerin appeared to be impaired in proliferatively active environments (malignancies, hair follicles), indicating presence of an endogenous ligand with high affinity to saturate the C-type lectin under these conditions.

REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 10 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:794873 CAPLUS
DOCUMENT NUMBER: 136:165111
TITLE: Human plasma trans-sialidase causes atherogenic modification of low density lipoprotein
AUTHOR(S): Tertov, V. V.; Kaplun, V. V.; Sobenin, I. A.; Boytsova, E. Yu.; Bovin, N. V.; Orekhov, A. N.
CORPORATE SOURCE: Cardiology Research Center, Institute of Experimental Cardiology, Institute for Atherosclerosis Research Ltd, Moscow, 121552, Russia
SOURCE: Atherosclerosis (Shannon, Ireland) (2001), 159(1), 103-115
CODEN: ATHSBL; ISSN: 0021-9150
PUBLISHER: Elsevier Science Ireland Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In earlier studies we have found that incubation of low d. lipoprotein (LDL) with autologous blood plasma-derived serum leads to a loss of sialic acid from lipoprotein particles. In this study we demonstrated that sialic acid removed from LDL was transferred to glycoconjugates of lipoproteins, glycoproteins and sphingolipids of human serum. This showed that human serum contained the trans-sialidase activity. Gel-filtration chromatog. of human blood serum demonstrated the presence of trans-sialidase activity in lipoprotein subfractions as well as in lipoprotein-deficient serum. Trans-sialidase (about 65 kDa) was isolated from lipoprotein-deficient serum using affinity chromatog. carried out with Neu5Acα2-8Neu5Ac-Sepharose FF-6. Optimal pH values for the trans-sialidase were 3.0, 5.0 and 7.0. Calcium and magnesium ions

stimulated the enzyme activity at millimolar concns. Isolated enzyme can remove sialic acid from LDL, IDL, VLDL, and HDL particles (in decreasing rate order). Serum trans-sialidase transferred sialic acid from glycoconjugates of plasma proteins (fetuin, transferrin) and gangliosides (GM3, GD3, GM1, GD1a, GD1b). Sialylated glycoconjugates of human blood erythrocytes also served as substrate for serum trans-sialidase. We have found that sialic acid can also be removed from N- and O-linked glycans, sialylated Lex and Lea, oligosialic acids, and sphingolipid carbohydrate chains. The rate of sialic acid release decreased in the following order: α2,6>α2,3»α2,8. Transferred mol. of sialic acid can form α2,6, α2,3 and to a lesser degree α2,8 linkage with galactose, N-acetyl-galactosamine or sialic acid of acceptors. The glycoconjugates of erythrocytes, lipoprotein particles, plasma proteins, neutral sphingolipids and gangliosides may serve as acceptors of transferred sialic acid. Trans-sialidase-treated native LDL becomes desialylated and then can induce cholesteryl ester accumulation in human aortic intimal smooth muscle cells. Thus, trans-sialidase may be involved in the early stages of atherogenesis characterized by foam cell formation.

REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 11 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:552538 CAPLUS
DOCUMENT NUMBER: 135:318644
TITLE: Modified blood group A trisaccharide probes: synthesis and interaction with antibodies
AUTHOR(S): Shipova, Ekaterina V.; Bovin, Nicolai V.
CORPORATE SOURCE: Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, 117871, Russia
SOURCE: Carbohydrate Letters (2001), 4(2), 85-90
CODEN: CLETEC; ISSN: 1073-5070
PUBLISHER: Harwood Academic Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 135:318644

AB Three derivs. modified at the acetamide fragment of blood group trisaccharide A, GalNAcα1-3(Fucα1-2)Galβ-O-spacer were synthesized. In the first compound the amide oxygen was substituted for the sulfur atom. In the second compound the Me group was replaced with the trifluoromethyl moiety, and in the third compound the Me group was replaced with the hydrogen atom. The interaction of these probes with anti-A monoclonal antibodies gives the information about significance of trisaccharide Me and carbonyl groups for the formation of protein-carbohydrates complex.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 12 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:251381 CAPLUS
DOCUMENT NUMBER: 135:44969
TITLE: Natural hidden autoantibodies react with negatively charged carbohydrates and xenoantigen Bdi
AUTHOR(S): Lekakh, I. V.; Bovin, N. V.; Bezyaeva, G. P.; Poverenny, A. M.
CORPORATE SOURCE: Medical Radiology Research Center, Russian Academy of Medical Sciences, Obninsk, 249020, Russia
SOURCE: Biochemistry (Moscow, Russian Federation)(Translation of Biokhimiya (Moscow, Russian Federation)) (2001),

66(2), 163-167
CODEN: BIORAK; ISSN: 0006-2979
PUBLISHER: MAIK Nauka/Interperiodica Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Ig prepns. from sera of healthy donors contain polyspecific autoantibodies interacting with DNA and other charged antigens. These antibodies belong to the IgG class and can exist in the free or hidden state. The hidden antibody activity can be revealed after ion-exchange chromatog. on QAE-Sephadex A-50. Immunoenzyme assay was used to assess the interactions of both free and hidden antibodies with different carbohydrates. The hidden antibodies were only able to interact with different polyanionic carbohydrates and neutral xenoantigen Bdi.
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 13 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:763249 CAPLUS
DOCUMENT NUMBER: 134:40780
TITLE: Tk, a new colon tumor-associated antigen resulting from altered O-glycosylation
AUTHOR(S): Meichenin, Marc; Rocher, Jezabel; Galanina, Oxana; Bovin, Nicolai; Nifant'ev, Nikolay; Sherman, Andrei; Cassagnau, Elisabeth; Heymann, Marie Francoise; Bara, Jacques; Fraser, Robin H.; Le Pendu, Jacques
CORPORATE SOURCE: INSERM U419, Institut de Biologie, Nantes, 44093, Fr.
SOURCE: Cancer Research (2000), 60(19), 5499-5507
CODEN: CNREA8; ISSN: 0008-5472
PUBLISHER: American Association for Cancer Research
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Erythrocyte polyagglutination antigens T and Tn are truncated O-glycan chains that are also carcinoma-associated antigens. The authors investigated whether Tk polyagglutination antigen could similarly be a carcinoma-associated marker and a target of immunotherapy. Monoclonal antibody LM389 was raised against Tk erythrocytes and tested by immunohistochem. LM389 strongly reacted with 48% human colorectal carcinomas. Labeling of normal tissues was visible on epithelial cells, mainly digestive, but was confined at a supranuclear level. Expression of the antigen on cloned human carcinoma cells correlated with sialosyl-Tn expression. O-Sialoglycoprotein endopeptidase treatment revealed that on carcinomas and cell lines, the epitope was present on O-glycans. Antibody specificity was determined using synthetic carbohydrates. Direct binding and inhibition studies indicated that LM389 best ligands were terminated by 2 branched N-acetylglucosamine units. Screening of murine cellular cell lines with LM389 allowed development of an exptl. model with Tk-pos. and -neg. cells in syngeneic BDIX rats. Vaccination of rats with Tk erythrocytes provided a protection against growth of rat Tk-pos., but not of Tk-neg., tumor cells in association with the development of antibodies. Thus, Tk polyagglutination antigen is a new colorectal carcinoma-associated antigen, absent from the normal cell surface, resulting from alteration of O-glycans biosynthesis and has potential as a target of immunotherapy.
REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 14 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:24629 CAPLUS

DOCUMENT NUMBER: 132:333259
TITLE: Binding sites for carrier-immobilized carbohydrates in the kidney: implication for the pathogenesis of Henoch-Schonlein purpura and/or IgA nephropathy
AUTHOR(S): Sediva, Anna; Smetana, Karel, Jr.; Stejskal, Josef; Bartunkova, Jirina; Liu, Fu-Tong; Bovin, Nicolai V.; Gabius, Hans-Joachim
CORPORATE SOURCE: Institute of Immunology, Charles University, Prague, CZ-150 18, Czech Rep.
SOURCE: Nephrology, Dialysis, Transplantation (1999), 14(12), 2885-2891
CODEN: NDTREA; ISSN: 0931-0509
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Henoch-Schonlein purpura is a common vasculitis of childhood affecting the skin, joints, gastrointestinal tract, and kidney. The mesangial deposition of IgA1 is the most critical factor for the prognosis of patients with this disease. The aberrant glycosylation of the IgA1 subclass with the absence of terminally located galactose and presence of only α-N-acetylgalactosamine in O-linked oligosaccharides in the hinge region of IgA1 represents a prominent difference from the normal IgA1. These alterations prompt the supposition that the sugar part may guide IgA deposition by recognition of endogenous lectins on the mesangium. Owing to the limited knowledge about the expression of carbohydrate -binding sites in the human kidney the authors initiated the study of this aspect with a class of tools which are suitable to map the lectinome of cells. Employing biotinylated neoglycoconjugates, glycosaminoglycans, and sulfated polysaccharides they monitored the presence of accessible carbohydrate-binding sites in control kidneys represented by tumor-free areas of kidneys with Grawitz tumor and in biopsies from patients with Henoch-Schonlein purpura-associated IgA nephropathy. Using frozen sections, no expression of any tested carbohydrate-binding site(s) was observed in the endothelial and mesangial cells in glomeruli of the control kidneys as well as in the biopsies from Henoch-Schonlein purpura IgA nephropathic kidneys, in contrast to the tubules. The N-acetylgalactosamine-binding sites were expressed only in the inner layer of Bowman's capsule of 20% of glomeruli of the control kidney from one patient with Grawitz tumor, and one biopsy from a patient with Henoch-Schonlein purpura-associated IgA nephropathy. However, the macrophages in the glomeruli of patients with IgA nephropathy and interstitial macrophages from both studied groups, i.e. without and with IgA nephropathy, harbor capacity to recognize carrier-immobilized α-N-acetylgalactosamine. Access to this binding site for the neoligand conjugate can be blocked by the monoclonal antibody MEM-18 recognizing CD14 antigen. The possibility for a participation of macrophage deposition of IgA1 in mesangium via a lectin mechanism involving this binding capacity warrants further studies.

REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 15 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1998:178974 CAPLUS
DOCUMENT NUMBER: 128:269300
TITLE: Enzyme immunoassay kit for detecting antibodies to group-specific antigen of group A Streptococcus on the basis of conjugated N-acetylglucosamine and its medical application
AUTHOR(S): Briko, N. I.; Bovin, N. V.; Shevelev, B. I.;

Dynga, L. O.; Blinnikova, E. I.; Kuksyuk, P. P.; Myasoedova, S. I.; Ambrosov, I. V.; Filatov, N. N.
CORPORATE SOURCE: Inst. Bioorg. Khim., Mosk. Med. Akad. im. Sechenova, Moscow, Russia
SOURCE: Klinicheskaya Laboratornaya Diagnostika (1997), (9), 43-46
CODEN: KLDIES; ISSN: 0869-2084
PUBLISHER: Meditsina
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Enzyme immunoassay kit has been created for detecting antibodies to group A Streptococcus, based on N-acetylglucosamine. N-acetylglucosamine was selected as the group-specific determinant due to the structure of group A Streptococcus polysaccharide, in which this monosaccharide residue is lateral to the main polysaccharide chain and hence more available for antibodies. Water-soluble polyacrylamide is the carrier in this kit, for this carrier is stable and not prone to nonspecific reaction with proteins. In addition, the synthesis of polyacrylamide conjugates ensures reproducible results. Use of this kit permits the identification of group A streptococcal etiol. of the disease and thus carry out appropriate therapy; moreover, it helps predict the outcome of an acute streptococcal infection and detect the post-streptococcal complications in the early period of the disease.

L7 ANSWER 16 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1998:2020 CAPLUS
DOCUMENT NUMBER: 128:100805
TITLE: Enzyme-linked immunosorbent assay of IgM antibodies to Thomsen-Friedenreich (TF) hapten in oncodiagnostics: comparison of data obtained with four TF-glycoconjugates
AUTHOR(S): Smorodin, E. P.; Jansson, B.; Milyukhina, L.; Paaski, G.; Bovin, N. V.; Ovchinnikova, T. V.; Kurtenkov, O.
CORPORATE SOURCE: Institute of Experimental and Clinical Medicine, Tallinn, Estonia
SOURCE: Bioorganicheskaya Khimiya (1997), 23(10), 795-799
CODEN: BIKHD7; ISSN: 0132-3423
PUBLISHER: MAIK Nauka
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB The level of IgM antibodies to the Thomsen-Friedenreich hapten (TF) relative to the total IgM level in the blood sera of gastric and breast carcinoma patients and healthy persons was determined using ELISA. The following TF glycoconjugates were tested: TF-polyacrylamide (PAA) (with 10mol.% of TF hapten Galβ1-3GalNAcα-O(CH2)3NH per number of monomeric units in the polyacrylamide), TF-human serum albumin (HSA) (Galβ1-3GalNAcα-O-p-C6H4-HSA containing approx. 15 carbohydrate residues per HSA mol.), asialo-κ-caseinoglycopeptide, and asialoglycophorin. The total IgM level was determined using antibodies to the μ-chain of human IgM. The statistically significant difference between cancer patients and healthy donors was revealed with two conjugates: TF-PAA and TF-HSA. In case of TF-PPA, the sensitivity of the assay was 75-83%, and the specificity was 77%. Thus, TF-PAA is the most suitable conjugate for measuring the level of serum anti-TF-IgM antibodies.

L7 ANSWER 17 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1997:77974 CAPLUS
DOCUMENT NUMBER: 126:183292

TITLE: Polyacrylamide-based glycoconjugates as tools for studying lectins, antigens and glycosyltransferases in glycobiology, cytochemistry, and histochemistry
AUTHOR(S): Bovin, N. V.
CORPORATE SOURCE: Inst. Bioorg. Khim. im. M. M. Shemyakina, RAN, Moscow, 117871, Russia
SOURCE: Bioorganicheskaya Khimiya (1996), 22(9), 643-663 CODEN: BIKHD7; ISSN: 0132-3423
PUBLISHER: MAIK Nauka
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Russian

AB A review and discussion with 81 refs. about the synthesis, physicochem. characteristics, and applications for studying the carbohydrate -binding mols. of some analogs of human cell glycoconjugates, neoglycoconjugates. An approach to the synthesis of the polyacrylamide derivs. of carbohydrates based on the interaction of fully activated polyacrylic acid with ω-amino alkyl glycosides is described. It provides highly reproducible results, is simpler than previously known methods of synthesis of such derivs., and expands the range of synthetic possibilities because it can provide both the sugar-polymer type mols. and conjugates bearing various labels and effectors, sorbents, glyco surfaces, etc. In the first part of the review, the synthesis of polyacrylamide conjugates and their physicochem. properties are described. In the second part, the synthesis of some complex compds., such as pseudoglycoproteins, pseudomucins, glyco particles, and glyco surfaces, is outlined. Some examples of the application of the described conjugates in various fields of glycobiol. are also discussed. Prospects for further development of the presented approach in glycotechnol. and medicine are also described.

L7 ANSWER 18 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1996:573782 CAPLUS
DOCUMENT NUMBER: 125:219140
TITLE: Receptors of selectins. 5. Monoclonal antibodies to synthetic antigens SiaLea and SiaLex
AUTHOR(S): Vlasova, E. V.; Vorozhaikina, M. M.; Khral'tsova, L. S.; Tuzikov, A. B.; Popova, I. S.; Tsvetkov, Yu. E.; Nifant'ev, N. E.; Bovin, N. V.
CORPORATE SOURCE: Shemyakin-Ovchinnikov Inst. of Bioorganic Chem., Moscow, 117871, Russia
SOURCE: Bioorganicheskaya Khimiya (1996), 22(5), 358-365 CODEN: BIKHD7; ISSN: 0132-3423
PUBLISHER: MAIK Nauka
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB Five IgM class monoclonal antibodies (MAb) to the SiaLea tetrasaccharide, which is known as a serol. tumor marker CA 19.9, and 3 MAbs (1 of IgG3 and 2 of IgM class) to the SiaLex tetrasaccharide (differentiation antigen CD15s) were obtained against totally synthetic immunogens. The epitope specificity of the antibodies was determined using a wide range of oligosaccharides and their polyacrylamide conjugates. MAb 4E10 against SiaLea and MAb 4G5 to SiaLex were highly specific to the antigen predefined by immunization: they did not cross-react with either structurally and conformationally related oligosaccharides or with their disaccharide fragments. Two MAbs to SiaLea (D7 and E5B1) showed a weak binding to SiaLex. MAb CC1 recognized SiaLea and SiaLex almost equally, and MAb 5H9 to SiaLea cross-reacted with the non-sialylated form, the Lea trisaccharide. Two MAbs against SiaLex A3 and B11 bound to all carbohydrate structures containing the core disaccharide

Galβ-3(4)GlcNAc.

L7 ANSWER 19 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:779880 CAPLUS
DOCUMENT NUMBER: 123:166995
TITLE: Purification of monoclonal antibodies to Ley and Led carbohydrate antigens by ion-exchange and thiophilic-adsorption chromatography
AUTHOR(S): Rapoport, Eugeniya M.; Zhigis, Larisa S.; Vlasova, Ekaterina V.; Piskarev, Vladimir E.; Bovin, Nikolay V.; Zubov, Vitaly P.
CORPORATE SOURCE: Shemyakin-Ovchinnikov Inst. Biorg. Chem., Russian Acad. Sci., Moscow, 117871, Russia
SOURCE: Bioseparation (1995), 5(3), 141-6
CODEN: BISPE4; ISSN: 0923-179X
PUBLISHER: Kluwer
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The paper deals with convenient and fast method for purification of monoclonal antibodies (MAbs) to carbohydrate antigens Ley and Led from the cell culture and ascite fluid by ion-exchange chromatog. on S-Sepharose and salt-promoted chromatog. on a "thiophilic" adsorbent. One-step procedure on S-Sepharose of MAbs to Ley (IgG and IgM) provides significant purification (over 90% of contaminants were removed), while a purification factor for IgM to Led is much lower. Highly purified IgM to Led could be obtained by a two-step purification procedure including "thiophilic-adsorption" chromatog. and gel-filtration (90-98% of contaminants from the cell culture and ascite fluid were removed). The prepns. of IgG and IgM retain their initial antibody activity.

L7 ANSWER 20 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:716623 CAPLUS
DOCUMENT NUMBER: 123:141120
TITLE: Monoclonal antibody LU-BCRU-G7 against a breast tumor-associated glycoprotein recognizes the disaccharide Galβ1-3GlcNAc
AUTHOR(S): Rye, Phil D.; Bovin, Nicolai V.; Vlasova, Ekaterina V.; Walker, Rosemary A.
CORPORATE SOURCE: Inst. Cancer Research, Norwegian Radium Hospital, Oslo, Norway
SOURCE: Glycobiology (1995), 5(4), 385-9
CODEN: GLYCE3; ISSN: 0959-6658
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The monoclonal antibody LU-BCRU-G7, that was generated by in vitro immunization, shows clin. value as a prognostic marker in early stage breast carcinoma. It has now been characterized with regard to its binding epitope. Using a recently described method based on the construction of N-substituted polyacrylamide (PAA) derivs. of carbohydrates (pseudopolysaccharides), the structure of the epitope for the monoclonal antibody LU-BCRU-G7 has been determined Competitive binding assays and inhibitory enzyme-linked immunosorbent assays (ELISAs) using these pseudopolysaccharides have shown the LU-BCRU-G7 epitope to be a disaccharide Galβ1-3GlcNAc (Lec; where Gal is D-galactose, Glc is D-glucose and GlcNAc is N-acetyl-D-glucosamine). Both galactose and N-acetyl glucosamine moieties are essential for binding. Substitution on C-2 or C-3 of the terminal galactose abolished binding, as did galactose-α terminated oligosaccharides. The galactose moiety alone, as expressed by the Galβ-PAA conjugate, appeared to be a more

important feature of the epitope than the GlcNAc-PAA conjugate, which failed to bind or inhibit the LU-BCRU-G7 antibody. In the N-acetyl glucosamine moiety, binding was decreased but not eliminated by fucose substitution, as in Lea, or change in configuration of C-4, as in Galβ1-3GlcNAc. Omission of the NAc group resulted in complete loss of activity. The tetrasaccharide lacto-N-tetraose, although containing the terminal Lec disaccharide, does not react with the antibody, suggesting conformational interference of the binding site. These findings show that the monoclonal antibody LU-BCRU-G7 recognizes a terminal isolactosamine fragment on a tumor-associated glycoprotein, which we have previously shown to be inversely related to survival in breast cancer.

L7 ANSWER 21 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:678461 CAPLUS
DOCUMENT NUMBER: 121:278461
TITLE: Monoclonal antibodies directed to the synthetic carbohydrate antigen Ley
AUTHOR(S): Vlasova, E.V.; Byramova, N.E.; Tuzikov, A.B.; Zhigis, L.S.; Rapoport, E.M.; Khaidukov, S.V.; Bovin, N.V.
CORPORATE SOURCE: Shemyakin Institute of Bioorganic Chemistry, Moscow, 117871, Russia
SOURCE: Hybridoma (1994), 13(4), 295-301
CODEN: HYBRDY; ISSN: 0272-457X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Tetrasaccharide Fucα1-2Galβ1-4(Fucα1-3)GlcNAc is known as carbohydrate determinant of cancer- and AIDS-associated antigen Lewisy (Ley). Synthetic antigen to generate mouse monoclonal antibodies (MAbs) directed to Ley was prepared and constructed as a spacer-armed tetrasaccharide coupled with lipophilized polymer, Ley-PAA-PE, where PAA is a 30-kD polyacrylamide and PE is phosphatidylethanolamine. An efficient immune response was provided by using Ley-PAA-PE adsorbed on Salmonella minnesota. Pos. hybridomas were screened by ELISA (ELISA) using Ley-PAA as a coating agent. An inhibitory version of the same test system showed absolute specificity of two MAbs: only hapten Ley and Ley-PAA were strong inhibitors, in contrast to Leb, tri- and disaccharidic fragments of the mentioned tetrasaccharides, as well as their PAA-conjugates. MAbs obtained against synthetic antigen specifically stained the Ley (+) cell line A431.

L7 ANSWER 22 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:407074 CAPLUS
DOCUMENT NUMBER: 121:7074
TITLE: Inhibition of monocyte phagocytosis related to glycosylation of monoclonal antibody Fc fragment
AUTHOR(S): Kiryukhin, A. Yu.; Khramtsov, A. V.; Filatov, A. V.; Bovin, N. V.; Solovyev, M. Ye.; Bachurin, P. S.; Zemskov, V. M.
CORPORATE SOURCE: Inst. Immunol., Moscow, Russia
SOURCE: Immunologiya (Moscow, Russian Federation) (1993), (2), 13-17
CODEN: IMUNDA; ISSN: 0206-4952
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Monoclonal antibodies (Mab) T5G11 noticeably inhibited monocytic FcR-mediated functions (inhibition of erythrophagocytosis reached 60-90%) when immobilized on plastic. When Mab T5G11 was immobilized by protein A or anti-mouse IgG, the inhibition was cancelled. Fab fragments were unable to inhibit erythrophagocytosis either. Evaluation of Mab binding

with lectins Con A, PSL, PNA and WGA revealed enhanced T5G11 ability to bind lectin. Lectin-binding was inhibited in different degrees by water-soluble conjugates of monosaccharides with polyacrylamide. T5G11 obtained by culturing hybridoma cells with tunicamycin, compared to controls, had a 40% reduction in lectin-binding capacity and inhibited monocytic phagocytosis by only 30%. Their antigen- and protein A-binding characteristics in this case were not affected. It is inferred that the above Mab may have a peculiar composition or/and structure of Fc carbohydrate chains responsible for the inhibitory effects on FcR-mediated functions of monocytes.

L7 ANSWER 23 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:239572 CAPLUS
DOCUMENT NUMBER: 120:239572
TITLE: Synthesis of polymeric neoglycoconjugates based on N-substituted polyacrylamides
AUTHOR(S): Bovin, N. V.; Korchagina, E. Y.; Zemlyanukhina, T. V.; Byramova, N. E.; Galanina, O. E.; Zemlyakov, A. E.; Ivanov, A. E.; Zubov, V. P.; Mochalova, L. V.
CORPORATE SOURCE: Shemyakin Inst. Bioorg. Chemi., Moscow, Russia
SOURCE: Glycoconjugate Journal (1993), 10(2), 142-51
CODEN: GLJOEW; ISSN: 0282-0080
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Several types of polymeric glycoconjugates, N-substituted polyacrylamides, have been synthesized by the reaction of activated polymers with ω-aminoalkylglycosides: (i) (carbohydrate -spacer)n-polyacrylamide, pseudopolysaccharides'; (ii) (carbohydrate-spacer)n-phosphatidylethanolaminem-polyacrylamide, neoglycolipids, derivs. of phosphatidylethanolamine; (iii) (carbohydrate-spacer)n-biotinm-polyacrylamide, biotinylated probes; (i.v.) (carbohydrate-spacer)n-polyacrylamide-(macroporous glass), affinity sorbents based on macroporous glass, covalently coated with polyacrylamide. An almost quant. yield in the conjugation reaction makes it possible to insert in the conjugate a predetd. quantity of the ligand(s). Pseudopolysaccharides proved to be a suitable form of antigen for activation of polystyrene and poly(vinyl chloride) plates (ELISA) and nitrocellulose membranes (dot blot), being advantageous over traditional neoglycoproteins. Polyvalent glycolipids insert well in biol. membranes: their phys. properties, particularly solubility, can be changed in a desired direction. Biotinylated derivs. were used as probes for detection and anal. of lectins.

L7 ANSWER 24 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1992:4880 CAPLUS
DOCUMENT NUMBER: 116:4880
ORIGINAL REFERENCE NO.: 116:975a,978a
TITLE: Epitope specificity of hemagglutinating monoclonal anti-B antibodies
AUTHOR(S): Galanina, O. E.; Deryugina, E. I.; Olovnikova, N. I.; Nosyrev, A. E.; Lapenkov, M. I.; Chekneva, N. B.; Zemlyanukhina, T. V.; Korchagina, E. Yu.; Bovin, N. V.
CORPORATE SOURCE: M. M. Shemyakin Inst. Bioorg. Chem., Moscow, USSR
SOURCE: Bioorganicheskaya Khimiya (1991), 17(9), 1177-87
CODEN: BIKHD7; ISSN: 0132-3423
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Fine epitope specificity of 10 monoclonal antibodies (MA) agglutinating

red blood cells B was studied. Three methods were used: 1) inhibition of MA binding to natural antigen by synthetic oligosaccharides (OS) and their polyacrylamide conjugates; 2) direct MA binding to a series of synthetic OS-polyacrylamide conjugates differing in carbohydrate epitope d.; and 3) direct MA binding to the affinity sorbents. All antibodies prefered trisaccharide B determinant Galα1-3(Fucα1-2) Gal independently of their ability ot discriminate serol. subgroups of B erythrocytes (B, Bweak, B3). The correlation of the MAs epitope specificity with their ability to agglutinate red blood cells B subgroups is discussed. Of interest is that MAs which are able to agglutinate any B subgroups also bind the synthetic tetrasaccharide Galα1-3(Fucα1-2)Galβ1-3GalNAc, a B type 3 determinant.

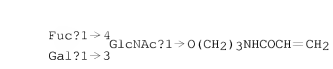
L7 ANSWER 25 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1988:148510 CAPLUS
DOCUMENT NUMBER: 108:148510
ORIGINAL REFERENCE NO.: 108:24355a,24358a
TITLE: Polyclonal antibodies to artificial Lewis A antigen: production, characterization and their application to identification of carbohydrate determinants on cell surface of mouse teratocarcinoma F-9
AUTHOR(S): Khorlin, A. Ya.; Bovin, N. V.; Gabrielyan, N. D.; Gargul'yan, E. V.; Zatevakhina, G. V.; Anfimova, M. L.
CORPORATE SOURCE: Inst. Bioorg. Khim. im. Shemyakina, Moscow, USSR
SOURCE: Immunologiya (Moscow, Russian Federation) (1987), (5), 65-9
CODEN: IMUNDA; ISSN: 0206-4952
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Polyclonal antibodies were obtained to artificial Lewis A antigen (Lea spacer-bovine albumin). The antibody specificity was characterized with the use of synthetic oligosaccharide-fragments of the antigen carbohydrate component. The antibodies were highly specific, as their interaction with carbohydrate determinants required the presence of 2 terminal monosaccharides: D-galactose and L-fucose. These antibodies reacted with artificial Lex antigen, which has theor. conformation affinity with Lea antigen. The antibodies interacted with natural antigens (soluble and membrane-bound). These antibodies were successfully used to detect SSEA-1 antigen on the cell surface of mouse teratocarcinoma F-9.

L7 ANSWER 26 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1986:168703 CAPLUS
DOCUMENT NUMBER: 104:168703
ORIGINAL REFERENCE NO.: 104:26739a,26742a
TITLE: Artificial carbohydrate antigens. Incorporation of the Lea trisaccharideinto polymers having an oligosaccharide → glycosylated spacer → antigen structure.
AUTHOR(S): Bovin, N. V.; Ivanova, I. A.; Khorlin, A. Ya.
CORPORATE SOURCE: M. M. Shemyakin Inst. Bioorg. Chem., Moscow, USSR
SOURCE: Bioorganicheskaya Khimiya (1985), 11(5), 662-70
CODEN: BIKHD7; ISSN: 0132-3423
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB The Lea trisaccharide, O-α-D-Fucp-(1→4)-O-[β-D-Galp-(1→3)]-D-GlcNAc, was synthesized by selective β-

galactosylation of benzyl 2-acetamido-6-O-acetyl-2-deoxy-α-D-glucopyranoside with acetobromogalactose to give benzyl 2-acetamido-6-O-acetyl-3-O-(2,3,4,6-tetra-O-acetyl-β-D-galactopyranosyl)-2-deoxy-α-D-glucopyranoside which was further α-fucosylated by diphenylcyclopropenyl method or bromide-ion catalyzed reaction to give protected Lea trisaccharide. The deprotected trisaccharide was converted via acetylated oxazoline derivative into 3-(trifluoroacetamido)propyl β-trioside which was transformed into glycosides in which the Lea trisaccharide is connected with spacers containing amino-, azidocarbonyl-, or N-acryloyl groups. Conjugation of the spacered trisaccharide with proteins or copolymn. with acrylamide led to artificial Lea antigens.

L7 ANSWER 27 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1986:146700 CAPLUS
DOCUMENT NUMBER: 104:146700
ORIGINAL REFERENCE NO.: 104:23187a,23190a
TITLE: Artificial peptide and carbohydrate antigens. Immobilization of haptens and adjuvant (MDP) on polyacrylamide
AUTHOR(S): Yurovskii, V. V.; Bovin, N. V.; Safonova, N. G.; Vasilov, R. G.; Khorlin, A. Ya.
CORPORATE SOURCE: M. M. Shemyakin Inst. Bioorg. Chem., Moscow, USSR
SOURCE: Bioorganicheskaya Khimiya (1986), 12(1), 100-5
CODEN: BIKHD7; ISSN: 0132-3423
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB To study the influence of a polyacrylamide carrier on the immunogenic properties of peptide and oligosaccharide haptens, artificial antigens were prepared by conjugation of a synthetic hexapeptide (homologous to fragment 95-100 of the murine blood groups, Lea) with polyacrylamide. In some cases conjugates containing also a synthetic glycopeptide adjuvant, N-acetylmuramyl-L-alanyl-D-isoglutamine (MDP), were used. Antisera against haptens were obtained by immunization of BALB-c mice with the corresponding conjugates. By the use of ELISA it was shown that these antisera had a high binding titer (up to 10,000) to the corresponding hapten, and MDP immobilized on the same carrier as the hapten possessed a considerable immunostimulating activity. Thus, the usefulness of polyacrylamide for preparation of immunogenic artificial mols. bearing peptide and oligosaccharide haptens was demonstrated.

L7 ANSWER 28 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1985:521257 CAPLUS
DOCUMENT NUMBER: 103:121257
ORIGINAL REFERENCE NO.: 103:19389a,19392a
TITLE: Immobilization of Lea trisaccharide and muramyldipeptide on polyacrylamide. Incorporation of adjuvant into artificial carbohydrate antigens
AUTHOR(S): Khorlin, A. Ya.; Bovin, N. V.
CORPORATE SOURCE: M. M. Shemyakin Inst. Bioorg. Chem., Moscow, USSR
SOURCE: Bioorganicheskaya Khimiya (1985), 11(5), 671-3
CODEN: BIKHD7; ISSN: 0132-3423
DOCUMENT TYPE: Journal
LANGUAGE: Russian
GI



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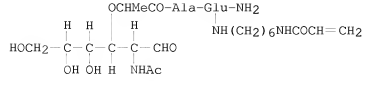

II

AB Artificial water-soluble carbohydrate antigens were prepared, either by reacting acrylamide with the β-[3-(acrylamido)propyl]glycoside of the Lea trisaccharide (I) (74:1 or 15:1) to form a copolymer containing the components in a 73:1 or 17:1 ratio, or by reacting acrylamide, I, and N1-(N-acetylmuramyl-L-alanyl-D-isoglutaminyl)-N6-acryloylhexamethylenediamine (II) (54:1:1) to produce a 3-component copolymer containing the components in a 58:1:1 ratio. The technique is recommended for preparation of artificial polyacrylamide-bound antigens having predictable adjuvant/hapten ratios.

=> file stng

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FULL ESTIMATED COST	150.76	150.97

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-22.40	-22.40

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LAST RELOADED: Apr 25, 2008 (20080425/UP).

=> file reg

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	1.14	152.11

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-22.40

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STRUCTURE FILE UPDATES: 27 APR 2008 HIGHEST RN 1017684-24-0
DICTIONARY FILE UPDATES: 27 APR 2008 HIGHEST RN 1017684-24-0

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TSCA INFORMATION NOW CURRENT THROUGH January 9, 2008.

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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

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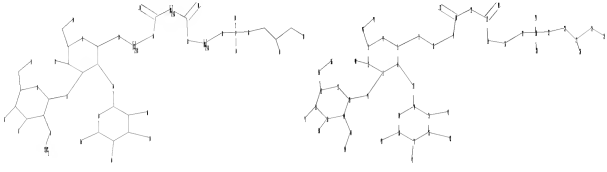

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ring bonds :
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exact/norm bonds :
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exact bonds :
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Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 9:CLASS 10:CLASS 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS 19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS 25:CLASS 26:CLASS 33:CLASS 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 40:CLASS 41:CLASS 42:CLASS 43:CLASS 44:CLASS 45:CLASS 46:CLASS 47:CLASS 48:Atom 49:Atom 50:Atom 51:Atom 52:Atom 53:Atom 54:CLASS 55:CLASS 56:CLASS 57:CLASS 58:CLASS 59:CLASS

L8 STRUCTURE UPLOADED

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L8 HAS NO ANSWERS
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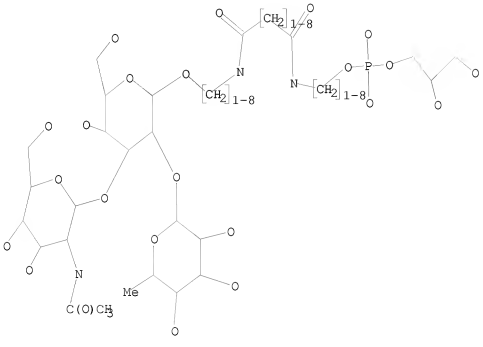

Structure attributes must be viewed using STN Express query preparation.

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SAMPLE SCREEN SEARCH COMPLETED - 5 TO ITERATE

100.0% PROCESSED 5 ITERATIONS 1 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 5 TO 234
PROJECTED ANSWERS: 1 TO 80

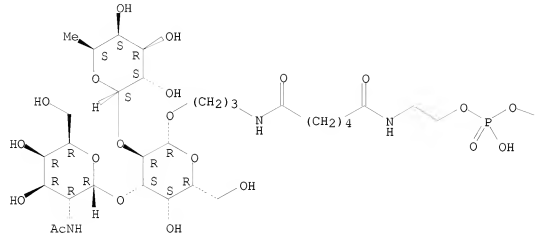
L9 1 SEA SSS SAM L8

=> d scan

L9 1 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN 9-Octadecenoic acid (9Z)-, (1R)-1-[17-[[O-2-(acetylamino)-2-deoxy-α-D-galactopyranosyl-(1→3)-O-[6-deoxy-α-L-galactopyranosyl-(1→2)]-β-D-galactopyranosyl]oxy]-3-hydroxy-3-oxido-8,13-dioxo-2,4-dioxa-7,14-diaza-3-phosphaheptadec-1-yl]-1,2-ethanediyl ester, monopotassium salt (9CI)
MF C70 H126 N3 O25 P . K

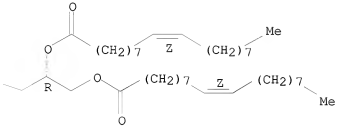
Absolute stereochemistry.
Double bond geometry as shown.

PAGE 1-A



● K

PAGE 1-B



ALL ANSWERS HAVE BEEN SCANNED

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L8 HAS NO ANSWERS
'FULL ' IS NOT A VALID STRUCTURE FORMAT KEYWORD
Structure Formats
SIA ----- Structure Image, Attributes, and map table if it contains
          data.  (Default)
SIM ----- Structure IMage.
SAT ----- Structure ATtributes and map table if it contains data.
SCT ----- Structure Connection Table and map table if it contains
          data.
SDA ----- All Structure DAta (image, attributes, connection table and
          map table if it contains data).
NOS ----- NO Structure data.
```

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ENTER STRUCTURE FORMAT (SIM), NOS:end

=> s l8 full
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FULL SCREEN SEARCH COMPLETED -       78 TO ITERATE

100.0% PROCESSED       78 ITERATIONS                                 8 ANSWERS
SEARCH TIME: 00.00.01

L10           8 SEA SSS FUL L8

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FILE LAST UPDATED: 27 Apr 2008  (20080427/ED)

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=> s l10
L11           1 L10

=> d l11

L11  ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2008 ACS on STN
AN   2005:1042259  CAPLUS
DN   143:339681
TI   Synthetic membrane anchors
IN   Bovin, Nicolai; Gilliver, Lissa; Henry, Stephen; Korchagina, Elena
PA   Kiwi Ingenuity Limited, N. Z.
SO   PCT Int. Appl., 109 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
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             LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
             NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM,
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     NZ 2005-537941         A     20050128
     WO 2005-NZ52           W     20050322
OS   MARPAT 143:339681
RE.CNT  6      THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
               ALL CITATIONS AVAILABLE IN THE RE FORMAT


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FULL ESTIMATED COST                                       1.69     332.16

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CA SUBSCRIBER PRICE                                       0.00     -22.40

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DICTIONARY FILE UPDATES: 27 APR 2008 HIGHEST RN 1017684-24-0

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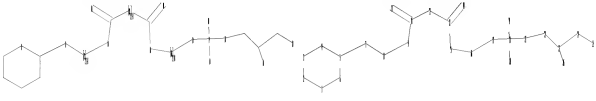

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18-20 18-21 21-22 22-23 23-24 23-26 24-25
ring bonds :
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18-21 21-22 23-26 24-25
exact bonds :
7-8 8-9 10-12 12-13 15-16 16-17 22-23 23-24

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 9:CLASS 10:CLASS
 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS
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L12   STRUCTURE UPLOADED

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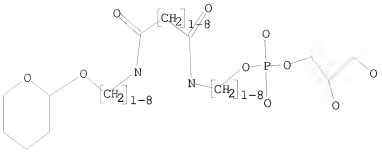
L12   STR



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100.0% PROCESSED       12 ITERATIONS                                4 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE   **COMPLETE**
                        BATCH    **COMPLETE**
PROJECTED ITERATIONS:            33 TO      447
PROJECTED ANSWERS:                4 TO      200

L13           4 SEA SSS SAM L12

=> s l12 full
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FULL SCREEN SEARCH COMPLETED -      269 TO ITERATE

100.0% PROCESSED      269 ITERATIONS                               32 ANSWERS
SEARCH TIME: 00.00.01

L14          32 SEA SSS FUL L12

=> file caplus
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                                                       ENTRY    SESSION
FULL ESTIMATED COST                                   178.36     510.58

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                       ENTRY    SESSION
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FILE COVERS 1907 - 28 Apr 2008 VOL 148 ISS 18
FILE LAST UPDATED: 27 Apr 2008 (20080427/ED)

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=> s l14
L15 1 L14

=> d

L15 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2005:1042259 CAPLUS
DN 143:339681
TI Synthetic membrane anchors
IN Bovin, Nicolai; Gilliver, Lissa; Henry, Stephen; Korchagina, Elena
PA Kiwi Ingenuity Limited, N. Z.
SO PCT Int. Appl., 109 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2005223715	A1	20050929	AU 2005-223715	20050322
	CA 2560781	A1	20050929	CA 2005-2560781	20050322
	EP 1735323	A1	20061227	EP 2005-722123	20050322
	R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				
	CN 1938325	A	20070328	CN 2005-80009170	20050322
	JP 2007530532	T	20071101	JP 2007-504907	20050322
	IN 2006DN06089	A	20070831	IN 2006-DN6089	20061018
	US 20070197466	A1	20070823	US 2007-593829	20070112
PRAI	NZ 2004-531866	A	20040322		
	NZ 2005-537941	A	20050128		
	WO 2005-NZ52	W	20050322		

OS MARPAT 143:339681
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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=> d his

     (FILE 'HOME' ENTERED AT 13:24:42 ON 28 APR 2008)

     FILE 'CAPLUS' ENTERED AT 13:24:55 ON 28 APR 2008
                E BOVIN NICOLAI/AU
L1           306 S E1-E13
                E GILLIVER LISSA/AU
L2             2 S E2-E3
                E HENRY STEPHEN/AU
L3            36 S E3-E10
                E KORCHAGINA ELENA/AU
L4            42 S E1-E6
L5           343 L1 OR L2 OR L3 OR L4
L6            71 S L5 AND ANTIGEN
L7            28 L6 AND (CARBOHYDRATE OR POLYSACCHARIDE)

     FILE 'STNGUIDE' ENTERED AT 13:26:40 ON 28 APR 2008

     FILE 'REGISTRY' ENTERED AT 13:38:11 ON 28 APR 2008
L8                 STRUCTURE UPLOADED
L9             1 S L8
L10            8 S L8 FULL

     FILE 'CAPLUS' ENTERED AT 13:38:55 ON 28 APR 2008
L11            1 S L10

     FILE 'STNGUIDE' ENTERED AT 13:39:08 ON 28 APR 2008

     FILE 'REGISTRY' ENTERED AT 13:39:13 ON 28 APR 2008
L12                STRUCTURE UPLOADED
L13            4 S L12
L14           32 S L12 FULL

     FILE 'CAPLUS' ENTERED AT 13:39:46 ON 28 APR 2008
L15            1 S L14

=>

---Logging off of STN---


=>
Executing the logoff script...


=> LOG Y

COST IN U.S. DOLLARS                            SINCE FILE      TOTAL
                                                  ENTRY    SESSION
FULL ESTIMATED COST                                2.17     512.75

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)      SINCE FILE      TOTAL
                                                  ENTRY    SESSION
CA SUBSCRIBER PRICE                                0.00     -22.40

STN INTERNATIONAL LOGOFF AT 13:40:50 ON 28 APR 2008
```